



## UI Students—Syllabus for Teaching in Champaign and Urbana Schools (2 hrs. each week)

*Week of Feb 18<sup>th</sup>*

**Hour 1: OVERVIEW and AQUATIC INVADER CONCEPT**

***Learning Objectives:*** -To understand the concept of aquatic invaders  
-To be introduced to the notion that they are part of a “Nab” Team  
-To know that all their work will be gathered in a portfolio that should include quality work and will be shown at a Stewardship Fair in April

***Outcome:*** A listing of two messages to get people to stop the spread of aquatic invaders

Ask students some preliminary questions to assess their knowledge about aquatic invaders.

UI students read prepared script to excite students about this project.

*“You are going to learn about 10 aquatic invasive species using a cool Web site, called, “Nab the Aquatic Invader!”.*

UI student prompts kids:

*What is an aquatic invasive species (organism)?*

*How do you think they got here?*

*Where did they come from?*

*During our time together over the next 10 weeks, we are going to find all the problems caused by these species. You’re going to get a chance to think like a detective and find ways that we can help stop the spread of these menacing creatures. We are going to develop a project together as a class. Some examples for a project would be doing a skit, creating posters or brochures, or doing an information campaign. At the end of the semester you will present your project at a big event on campus to share with your parents, friends, and our new community partners. We will talk more about this in a couple weeks.*

*We’re all going to be working as a “Nab Team” to make a difference in our community. We want to spread the word to our families, friends, and community organizations and businesses. So let’s use this “Nab the Aquatic Invader” site to get going on our mission to nab these problem-causing species.”*

-more-

**\*Briefly introduce homepage\***

Introduce concept of aquatic invaders

Navigate the students to the Kids' Secret Headquarters page and click on the "Who's Who" section [http://www.sgnis.org/kids/whos\\_who.html](http://www.sgnis.org/kids/whos_who.html)

Scroll through the photos, **one by one**, and ask kids to raise hands to indicate if they've ever seen or heard of each species. Hold off any discussion at this point!

As you identify the name of each plant or animal, mention what it is (i.e., purple loosestrife, a wetland plant; ruffe, a fish; sea lamprey, an eel-like fish; round goby, a fish; zebra mussel, a bi-valve two shelled mollusk...fishhook flea, a tiny crustacean, etc.)

Go back to the Homepage and click on "Meet the Suspects" folder. **UI student reads aloud only the one specific section** of the rap sheets —**"How did you get here?"**  
First do zebra mussel, then rusty crayfish, and finally, Brazilian elodea.

Tell students:

*"All the good detective work you will be doing on this project will be saved in a Detective Case File. Your work is going to be collected in a portfolio that may be displayed at the end of this project. We want this to be something that you will be proud of, as well as your teacher and family."*

Prompt students:

*"Put on your detective cap and decide how you would tell people to go about stopping the spread of these menacing invaders. Write down a couple of messages you would share with your community. Put it in the form of a public service ad in a newspaper. Remember you can use the information in the "How did you get here?" sections because they describe what people have done to bring these species in."*  
Pass out blank paper for the students and tell them to create a name for their newspaper at the top of the page.

## *Week of Feb 18<sup>th</sup>*

### **Hour 2: BIOLOGY AND ADAPTATIONS**

***Learning Objective:*** To be aware of the characteristics of invaders and their adaptations that make them successful in their new habitats.

***Outcome:*** Create a small WANTED Poster for one species [provide legal-sized paper]

*“Today we are going to look at the biology of these invaders and find out what makes them so successful in taking over a water habitat.”*

Ask for a volunteer to click on Detective ID on the homepage and read what he has to say about Invader Biology. <http://www.sgnis.org/kids/detectiveID.html>

*“Notice at the top left there are 2 case files—Junior detectives and Super Sleuths. Unfortunately, we don’t have time today to check out these activities, but we hope that you will go back and explore them either after school or during free time you might have during the school day. Use your “Nab the Aquatic Invader” bookmark for the Web address.”*

Take students to Suspects Page <http://www.sgnis.org/kids/suspects.html>

UI student reads each species character name out loud. [Feel free to add your own style and creativity to this rather than just reading the names off in a boring manner.]

Divide class into approximately 10 groups, assigning one species per group.

Each group chooses a person to read ONLY the *Crimes* and *Description* section of their assigned species. Clearly assign which student does what to eliminate confusion.

Have students refer to photos of Sea Lamprey as a reference for drawing their sketch of different invaders. Take students to Louie “Sucker Mouth”

[http://www.sgnis.org/kids/suspect\\_louie.html](http://www.sgnis.org/kids/suspect_louie.html) on Suspects Page. Scroll down to bottom and click on Photos. Take students to first URL

[http://sgnis.org/publicat/slide/catalog1.htm#Sea\\_Lamprey](http://sgnis.org/publicat/slide/catalog1.htm#Sea_Lamprey) to look at real images of Sea Lamprey.

Give students legal-sized paper and instruct them to make a WANTED Poster that includes the following—Character Name, Scientific Name, a General Sketch of the species, and a list of 2 or 3 special adaptive features that allow their WANTED species to successfully invade aquatic ecosystems.

## *Week of Feb 25<sup>th</sup>*

### **Hour 1: SPREAD**

***Learning Objectives:*** -To understand how aquatic invaders are transported and spread to new water bodies  
-To understand that people play a role in introducing these aquatic invaders, even though they might not realize it

***Outcome:*** Complete “Find 7 Ways” activity and discuss what they learned, as a class

*“Let’s meet another one of our detectives and learn about how these invaders successfully spread from one water body to another. You’ll see how people play a key role in moving these invaders from place to place.”*

*“On homepage, click on Detective Thumb-a-Ride”*

<http://www.sgnis.org/kids/detectiveID.html>

And have a youth volunteer read the intro paragraph.

*“This time we are going to do one of the Case File activities. Click on “Find 7 Ways” activity in the Junior Sleuth folder.”*

<http://www.sgnis.org/kids/activity/7ways/index.htm>

Have your students read the fact sheet link—“Protect Your Waters: General Prevention Procedures...”

UI Students should print out the “Find 7 Ways” activity page [provided on the COMPASS page] so that your students can complete it during class. Have students form teams to come up with the answers and circle the ways these species are introduced. Then come together as a class for discussion and look at the rollover answers on right side of Find 7 Ways page.

### **Hour 2: SPREAD**

***Learning Objectives:*** -To demonstrate their understanding of how aquatic invaders are transported and spread to new water bodies  
-To understand the roles people play in introducing these aquatic invaders, even though they might not realize it

***Outcome:*** Comic strip on human actions

Refer back to the “Protect Your Waters” fact sheet.

*“Let’s click on Detective Thumb-a-ride and then go to the “Find 7 Ways” activity. Read the bulleted action steps that people should take to help prevent spread. Choose one of the action steps and decide what message you want to get across.*

## *Week of Feb 25<sup>th</sup>*

### **Hour 2: SPREAD** (cont'd)

*You are going to create a comic strip today. Let's look at a couple examples on the Kids' Secret Headquarters Page—click on Student Projects folder. [Show them the work done by John and by Ethan.]*

*Begin drawing a rough draft of a comic strip that shows the ways people can learn how they spread invaders and what steps they can take to stop the spread. Carefully plan it out. Be sure to include dialogue for the action steps you've picked. Make sure your action steps are clear. Take about 10 minutes for this rough draft.*

*Remember, we want your comic strip to send a message to people about the right things to do. Raise your hand if you have questions and we'll come around and help you out."*

Tell them that that their **final** comic strip will need to be completed later that week either as a homework assignment or during class time if allowed by their teacher.

## *Week of Mar 3<sup>rd</sup>*

### Hour 1: IMPACT

**Learning Objectives:** -To understand the environmental impacts that are caused by aquatic invaders  
-To become familiar with Detective Eco-Friend's message  
-To engage in teamwork to identify many environmental impacts

**Outcomes:** -The Zeke and Zelda Matching Game [UI students will take photos of the students playing this game.]  
-A reflection on 5 environmental impacts caused by zebra mussels

**Preparation:** UI Students prepare before class TWO SETS of 8 ½ x 11 photos of NINE zebra mussel impacts that they will print on cardstock (found on the COMPASS site) UI Students will also print TWO SETS of the matching captions for each photo (found on the COMPASS site) that describe the actual impacts. At beginning of class, have one of your UI team members affix the photos to a bulletin board or tape on the wall. Ask teacher the best place to put these photos. To document this activity, UI students will take pictures of the class doing the activity.

*“Today we are going to learn about the many effects OR impacts that happen when aquatic invaders get into a new ecosystem. The invasion can really change the biodiversity of an ecosystem, affecting the food web. Remember that you and your classmates will be working on a stewardship project, so it's really important to know about all the problems these pesky invaders can cause.”*

**Emphasize to your students that people should care about the problems caused by aquatic invaders, such as zebra mussels.**

**Have a student read aloud** the intro paragraph for Detective EcoFriend

<http://www.sgnis.org/kids/detectiveEco.html>

**Have students read** “What's Your Problem?” section on Clyde, the Silver Carp Rap Sheet

[http://www.sgnis.org/kids/suspect\\_clyde.html](http://www.sgnis.org/kids/suspect_clyde.html)

[Tell the teacher that if they have additional class time, he/she should show their students the dramatic video showing silver carp impacts to boaters: Go to <http://www.sgnis.org/kids/activity/7ways/index.htm> and click on the URL link and then scroll to right side of page under “Video Clips” and click on Asian Carp in the Upper MS River.]

**Have students read** “What's Your Problem” on Zeke the Prowler Zebra Mussel

[http://www.sgnis.org/kids/suspect\\_zeke.html](http://www.sgnis.org/kids/suspect_zeke.html)

Click on Photos Link on the Rap Sheet and then click on SGNIS Images of Zebra Mussel. Read a few of the photo descriptions.

**Organize the class** into two teams (“Zeke” and “Zelda”). Have each team line up on the opposite sides of the room. Use a tag team approach and see which team can match up first the impacts (printed ahead of time by the UI students) with the correct photo. Team members can help the first one in line figure out the correct photo for the caption they pick. [Remember that UI students are responsible for affixing the photos to a bulletin board or tape on a wall before class starts]. Have students write a reflection on 5 ways that zebra mussels affect the environment, including what's the big deal about these impacts.

## *Week of Mar 3<sup>rd</sup> (cont'd)*

### **Hour 2: ECONOMIC IMPACT**

**Learning Objectives:** -To understand the economic impacts that are caused by aquatic invaders  
-To become familiar with Detective Dollar and Sense's message  
-To learn about the sea lamprey as a case study for how invaders can cost a lot of money and create major problems—in this case, problems to an industry and people's livelihoods

**Outcome:** Writing a persuasive letter to a government agency scientist that is studying ways to controls the spread of sea lamprey

**“Emphasize why people should care about the costs that result from aquatic invaders such as sea lamprey.”**

Have student read the intro paragraph for Detective Dollars and Sense

<http://www.sgnis.org/kids/detectiveDollars.html>

Then read the entire Rap Sheet for Louie “Sucker Mouth” Sea Lamprey

[http://www.sgnis.org/kids/suspect\\_louie.html](http://www.sgnis.org/kids/suspect_louie.html)

Click on Fact Sheets on that Lamprey Rap Sheet and select

*Sea Lamprey: The Battle Continues*

Minnesota Sea Grant

<http://www.seagrant.umn.edu/exotics/lamprey.html>

Ask your students **to read the 4<sup>th</sup> paragraph and find the reference to the economic impact** of sea lamprey. Ask students to raise their hands when they find the reference. Call on a student or two and make sure they provide all the info in the answer listed below.

*[Answer: before sea lampreys entered the Great Lakes, Canada and the United States harvested about 15 million lbs. (6.8 million kgs.) of lake trout in Lakes Huron and Superior annually. By the early 1960's the catch was only about 300,000 lbs. (136,077 kgs). The fishery was devastated.]*

Homework assignment for your students where you pose a scenario:

*“What if commercial fishing was your job? Let's say that 30,000 sea lamprey invaded your lake and kill thousands of lake trout and whitefish that you need to be catching to make money for your job.”*

*You heard that there is an agency called the Great Lakes Fishery Commission that is finding ways to control the sea lamprey, which is really harming your fishery and causing you to lose so much money. Write a short letter (at least 2 paragraphs) to a scientist in this agency. In your letter, explain why this is such an important issue for you in the commercial fishing business. Also tell how this problem will affect your community neighbors and friends in terms of the fish that won't be available for them to eat.”*

## *Week of March 10<sup>th</sup>*

### **Hour 1: Kids' Secret Headquarters**

*“Let’s take a look at some of the interesting things you’ll find on the “Kids’ Secret Headquarters” page [http://www.sgnis.org/kids/ask\\_experts.html](http://www.sgnis.org/kids/ask_experts.html).”*

[Note to UI students: Specifically show them the following sections—

**Limericks:** UI student read one limerick

**Ask the Experts:** Read the intro and tell the students that once they’ve had a chance to really get experienced with the set, they can try and stump a scientist with a hard question.

**Meet the Scientists:** Tell students that there are lots of opportunities for interesting careers. This section will show them some possibilities if they want to work as a scientist. You should read over and select one of the people profiled and then read aloud 1 or 2 of the questions for that person.

**Note to UI students:** *The above section should not take any longer than 10 minutes.*

UI Students: You will need to plan ahead of time with your classroom teacher which of the stewardship projects are feasible. In that way you can present to your students only those that the teachers have approved.

*“Now, let’s look at some community stewardship projects that have been done in other parts of the country. “Go to “Top Desk Administrator” section <http://www.sgnis.org/kids/administrator.html> and click on Community Stewardship Project Ideas for examples.”*

### **Hour 2: Selecting Stewardship Project and Creating Preliminary Action Plan**

*“We will talk now about what we can do as a class to help people in our community know more about aquatic invaders. We will also discuss some action steps we can develop to help our community prevent further spread.”*

Work together as a class to complete a preliminary action plan for the class community stewardship project. You should download enough copies of this for all of your students from the COMPASS site.

## ***Week of March 17<sup>th</sup>*    **Spring Break****

### ***Week of March 24<sup>th</sup>***

Stewardship Projects (2 hrs.) Continue to work on projects with guidance from UI students and classroom teacher.

### ***Week of March 31<sup>st</sup>***

Stewardship Projects (2 hrs.) Continue to work on stewardship projects.

### ***Week of April 7<sup>th</sup>***

Stewardship Projects (2 hr.)—Help school kids finalize their stewardship projects.

### ***Week of April 14<sup>th</sup>***

Create the stewardship project display for “Nabbing the Aquatic Invaders Community Stewardship Fair” to illustrate the final stewardship project and the process used to develop it.

### ***Week of April 21<sup>st</sup>***

In early part of the week continue to work with your school kids to put the finishing touches on their project for the Stewardship Fair on Wednesday. Help them practice their presentation.

### ***\*\*April 23<sup>rd</sup>\*\****

“Nabbing the Aquatic Invaders Community Stewardship Fair” at University of Illinois—Grade school students present their projects at U of I to parents, friends, pertinent community organizations, administrators, etc.

Create interactive dialogue between Fair visitors and the students by including comment cards at their exhibits or having the UI students document people’s reactions to the stewardship projects. This will allow us to obtain audience reflection to be used in the project’s assessment component.

### ***Week of April 28<sup>th</sup>***

Wrapup/Assessment/Reflection Time: U of I students conduct focus groups of grade school students to reflect on the project and assess its impact. [Refer to the one-pager: *Service Learning Reflection Activities*.]

[www.tcc.edu/students/specialized/civic/servicelearning/students/reflection.htm](http://www.tcc.edu/students/specialized/civic/servicelearning/students/reflection.htm)

UI student gather final reflections from school students and include them in the student portfolios.

## **Instructor Contact Information (for Schools Syllabus)**

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